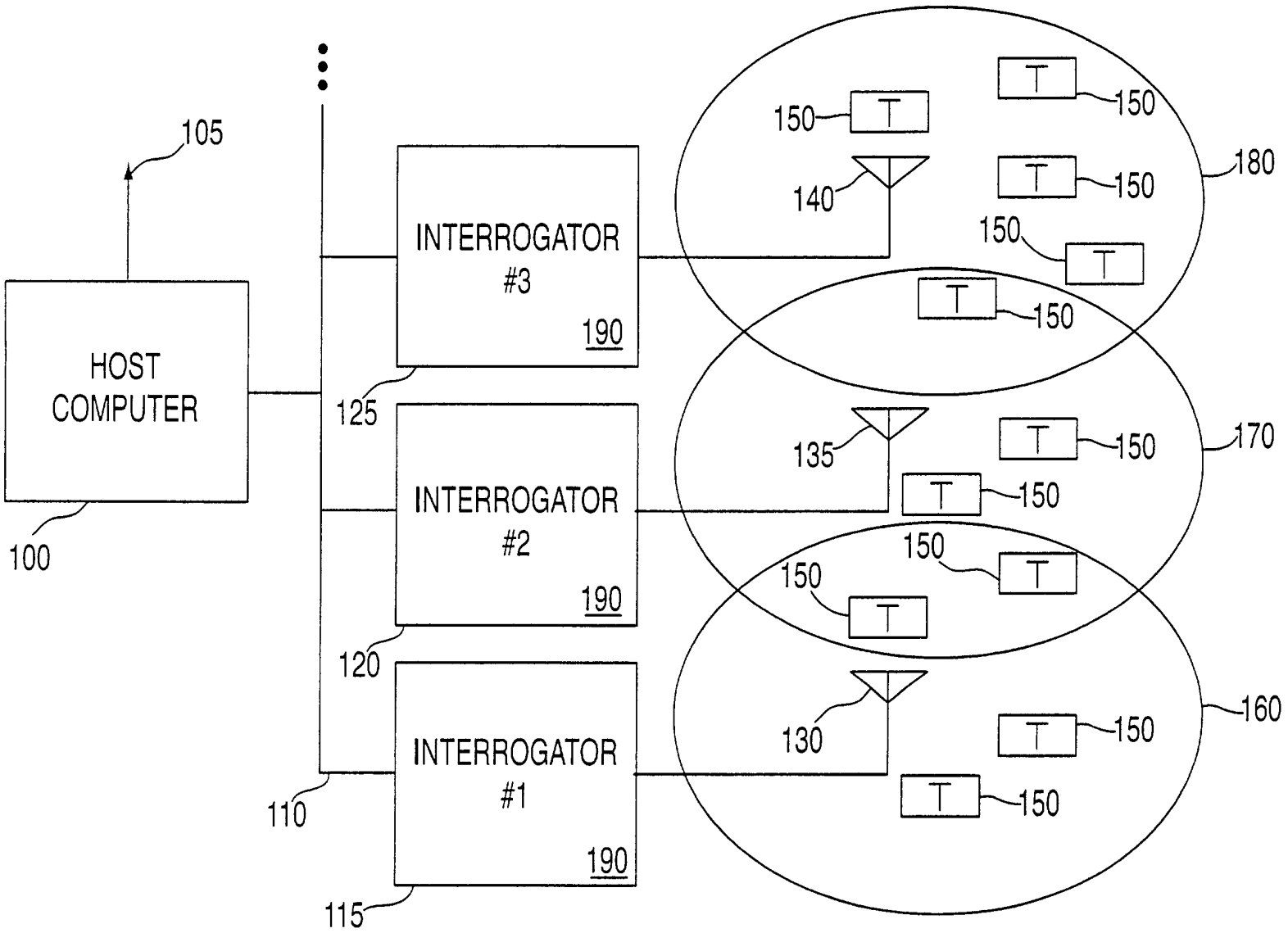

FIG. 1

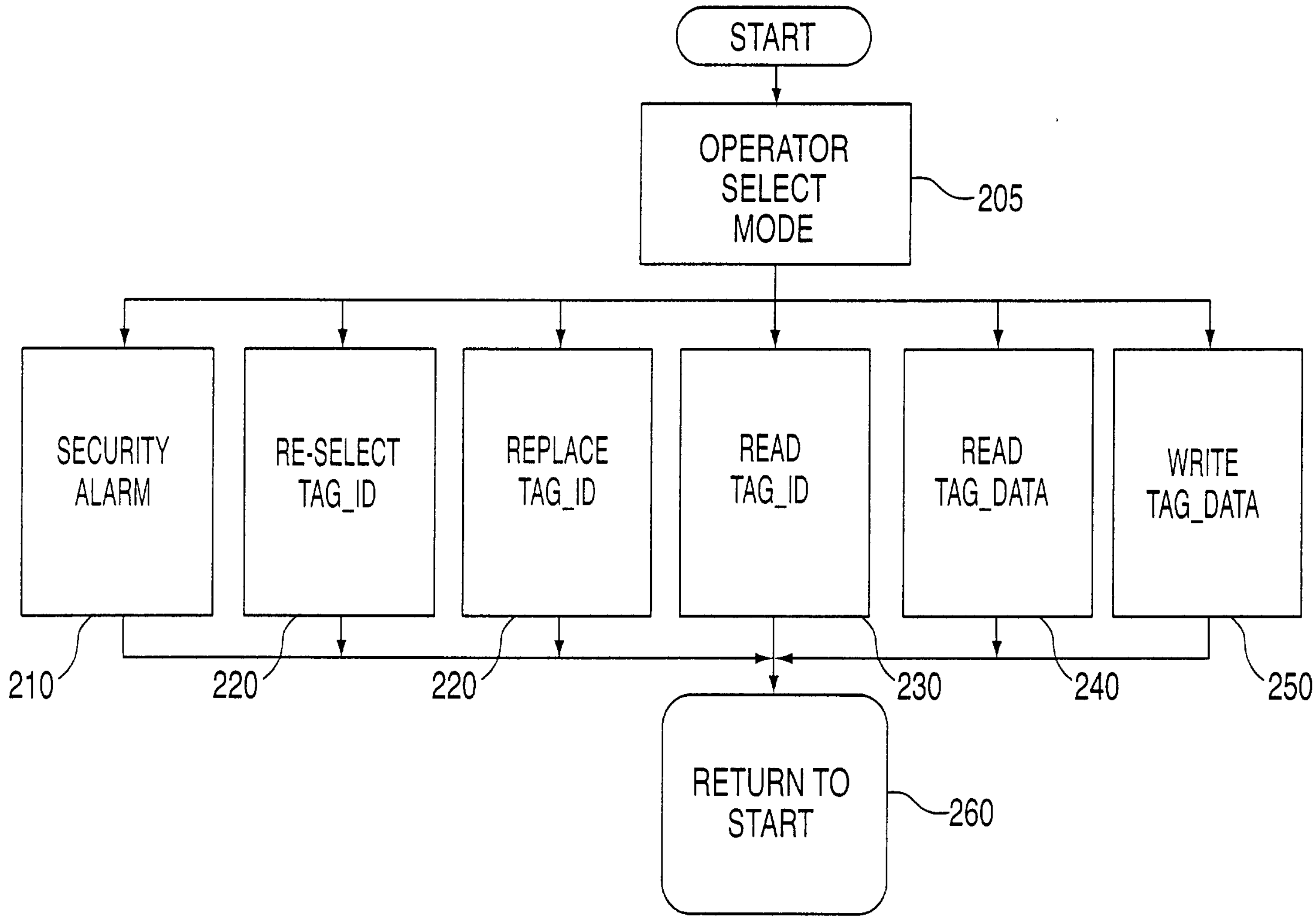
START
OPERATOR SELECT MODE
205
SECURITY ALARM
RE-SELECT TAG_ID
REPLACE TAG_ID
READ TAG_ID
READ TAG_DATA
WRITE TAG_DATA
210
220
220
230
240
250
RETURN TO START
260

FIG. 2

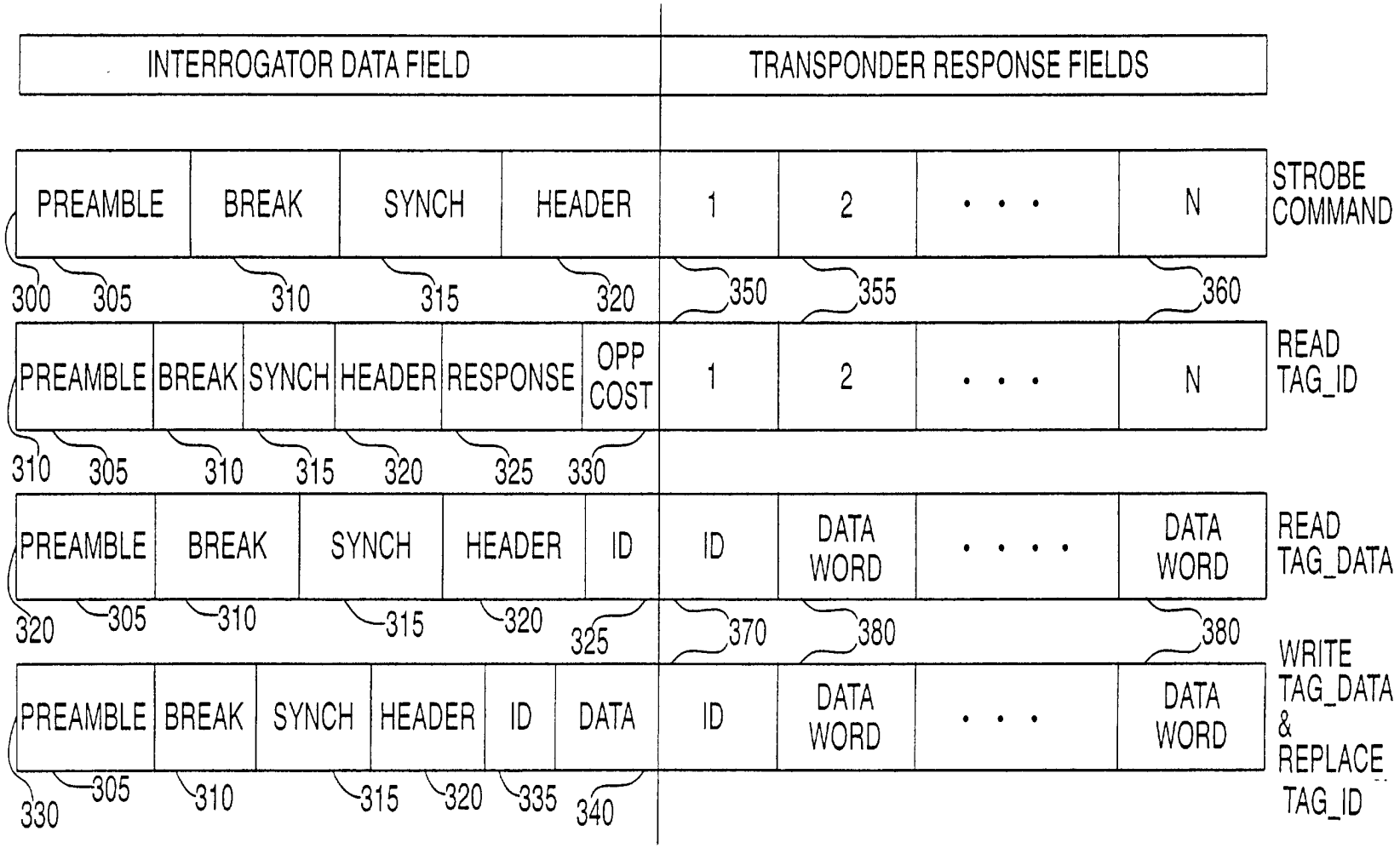

FIG. 3

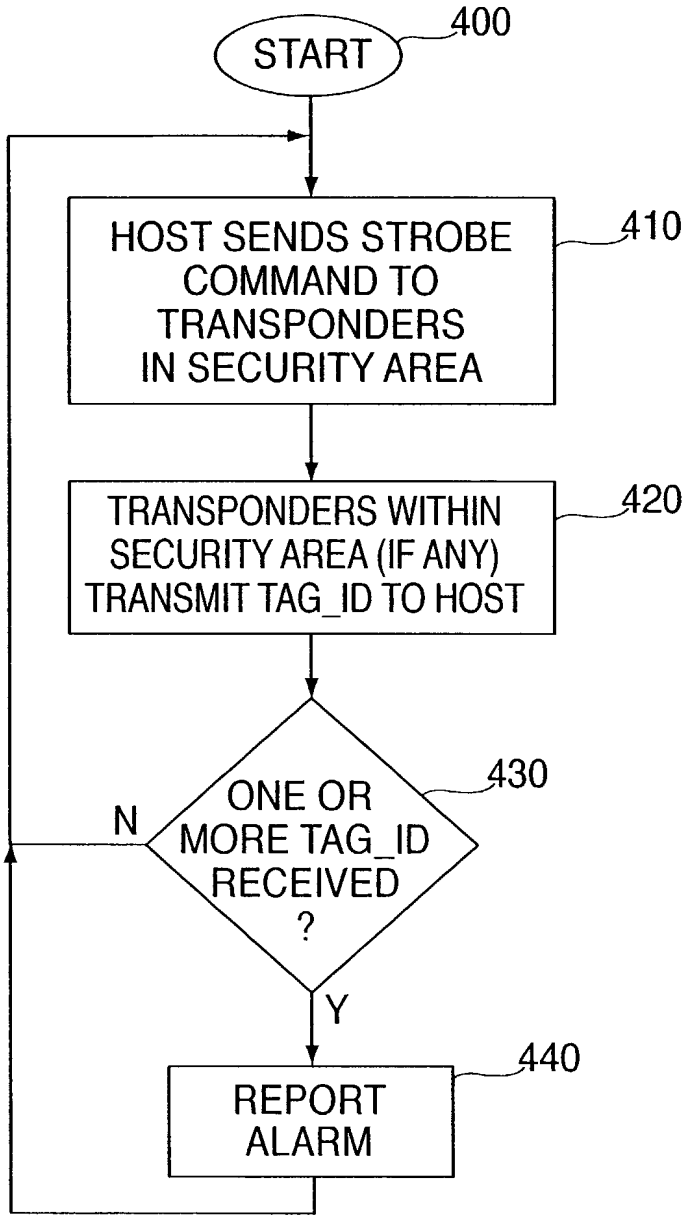
START
400
HOST SENDS STROBE COMMAND TO TRANSPONDERS IN SECURITY AREA
410
TRANSPONDERS WITHIN SECURITY AREA (IF ANY) TRANSMIT TAG_ID TO HOST
420
ONE OR MORE TAG_ID RECEIVED ?
430
N
Y
REPORT ALARM
440

FIG. 4

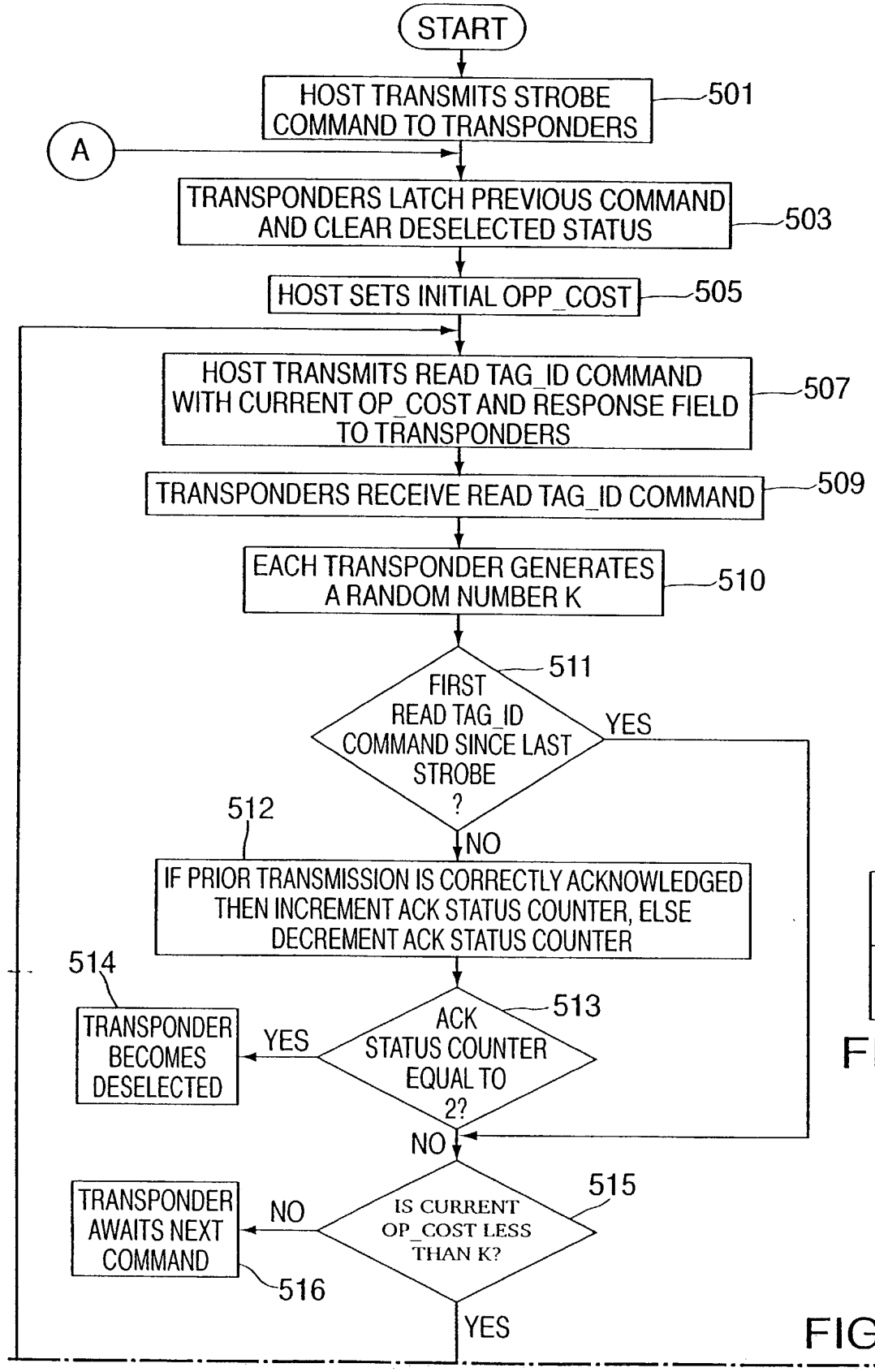

FIG. 5A

5A
5B

FIG. 5

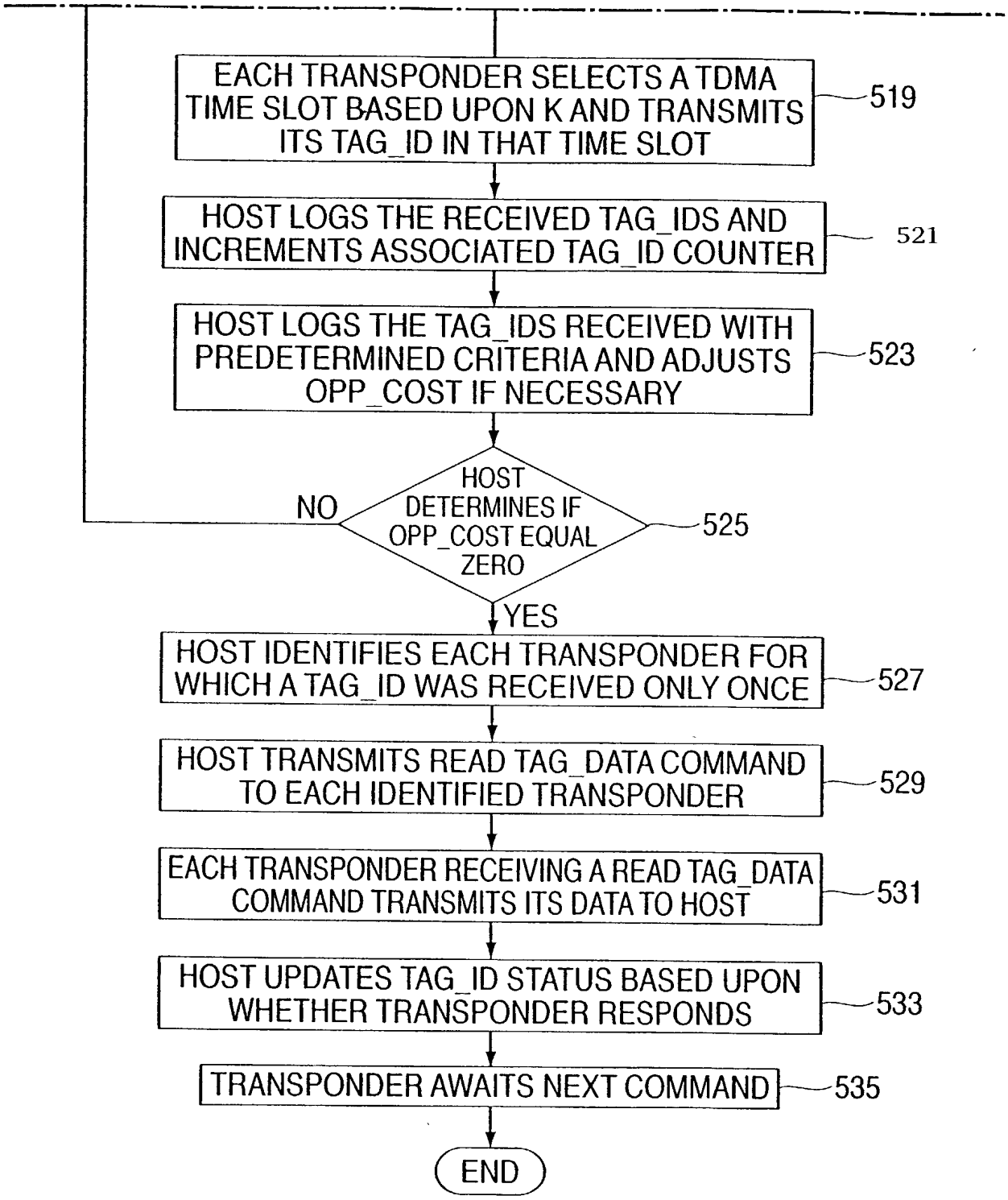
EACH TRANSPONDER SELECTS A TDMA TIME SLOT BASED UPON K AND TRANSMITS ITS TAG_ID IN THAT TIME SLOT
519
HOST LOGS THE RECEIVED TAG_IDS AND INCREMENTS ASSOCIATED TAG_ID COUNTER
521
HOST LOGS THE TAG_IDS RECEIVED WITH PREDETERMINED CRITERIA AND ADJUSTS OPP_COST IF NECESSARY
523
HOST DETERMINES IF OPP_COST EQUAL ZERO
525
NO
YES
HOST IDENTIFIES EACH TRANSPONDER FOR WHICH A TAG_ID WAS RECEIVED ONLY ONCE
527
HOST TRANSMITS READ TAG_DATA COMMAND TO EACH IDENTIFIED TRANSPONDER
529
EACH TRANSPONDER RECEIVING A READ TAG_DATA COMMAND TRANSMITS ITS DATA TO HOST
531
HOST UPDATES TAG_ID STATUS BASED UPON WHETHER TRANSPONDER RESPONDS
533
TRANSPONDER AWAITS NEXT COMMAND
535
END

FIG. 5B

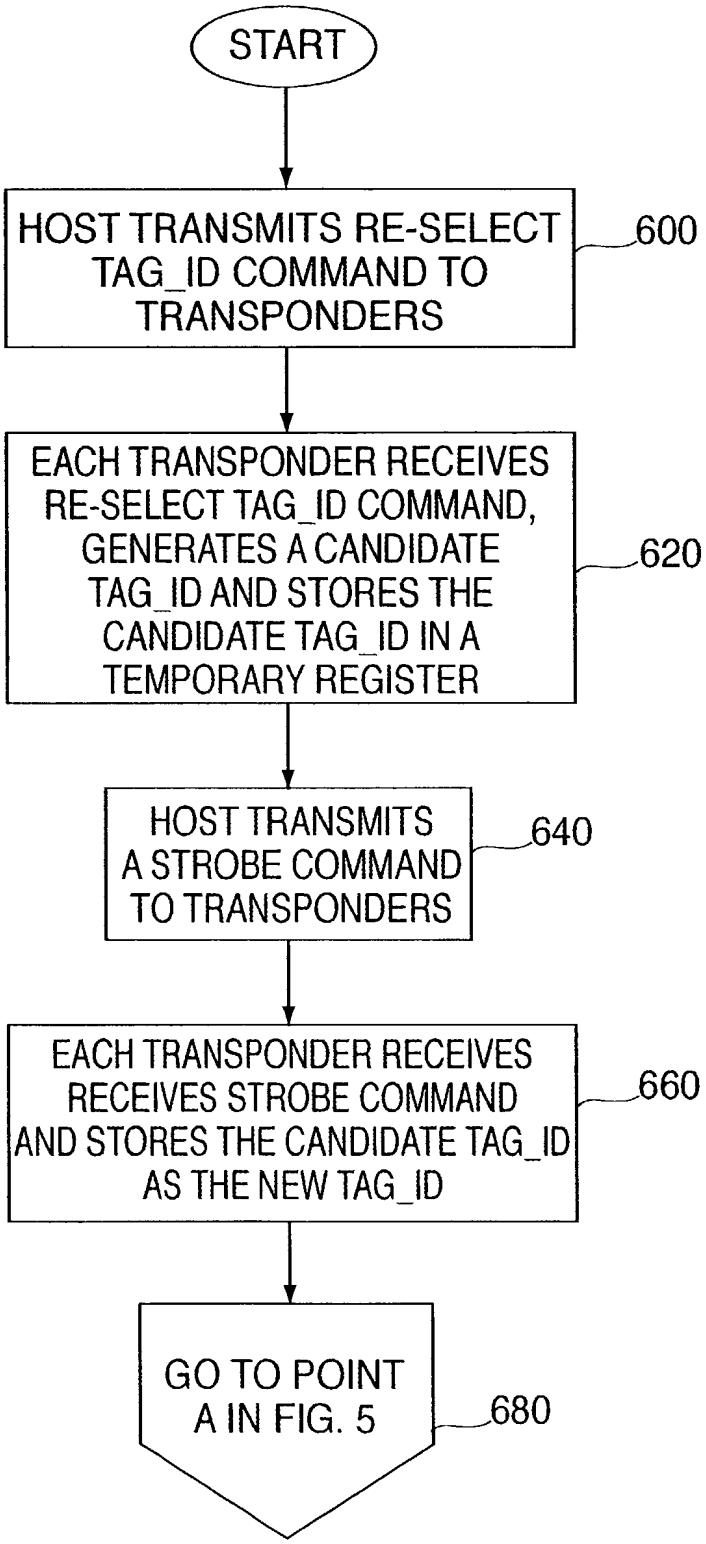
START
HOST TRANSMITS RE-SELECT TAG_ID COMMAND TO TRANSPONDERS
600
EACH TRANSPONDER RECEIVES RE-SELECT TAG_ID COMMAND, GENERATES A CANDIDATE TAG_ID AND STORES THE CANDIDATE TAG_ID IN A TEMPORARY REGISTER
620
HOST TRANSMITS A STROBE COMMAND TO TRANSPONDERS
640
EACH TRANSPONDER RECEIVES RECEIVES STROBE COMMAND AND STORES THE CANDIDATE TAG_ID AS THE NEW TAG_ID
660
GO TO POINT A IN FIG. 5
680

FIG. 6

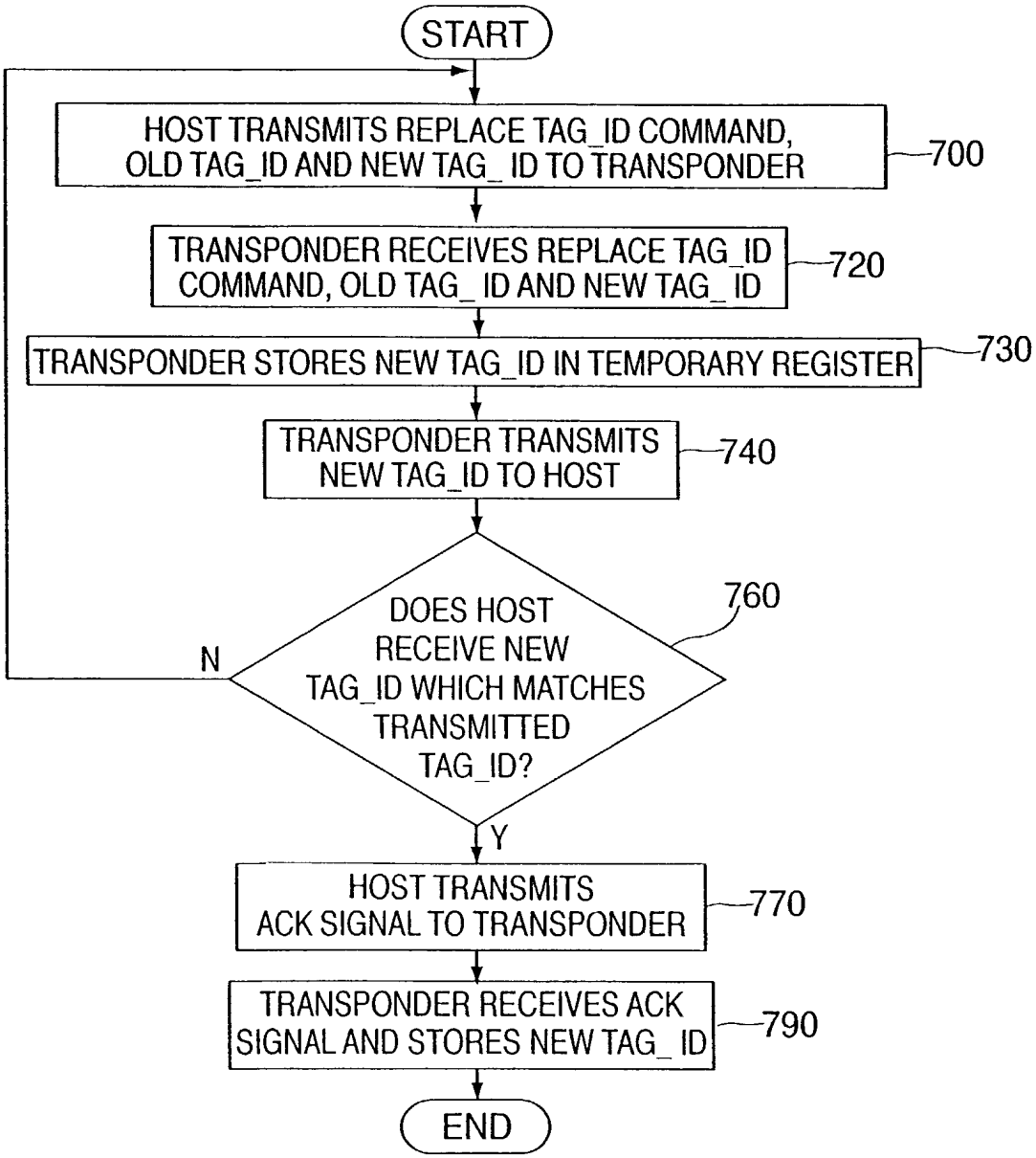
START
HOST TRANSMITS REPLACE TAG_ID COMMAND, OLD TAG_ID AND NEW TAG_ ID TO TRANSPONDER
700
TRANSPONDER RECEIVES REPLACE TAG_ID COMMAND, OLD TAG_ ID AND NEW TAG_ ID
720
TRANSPONDER STORES NEW TAG_ID IN TEMPORARY REGISTER
730
TRANSPONDER TRANSMITS NEW TAG_ID TO HOST
740
DOES HOST RECEIVE NEW TAG_ID WHICH MATCHES TRANSMITTED TAG_ID?
760
N
Y
HOST TRANSMITS ACK SIGNAL TO TRANSPONDER
770
TRANSPONDER RECEIVES ACK SIGNAL AND STORES NEW TAG_ ID
790
END

FIG. 7

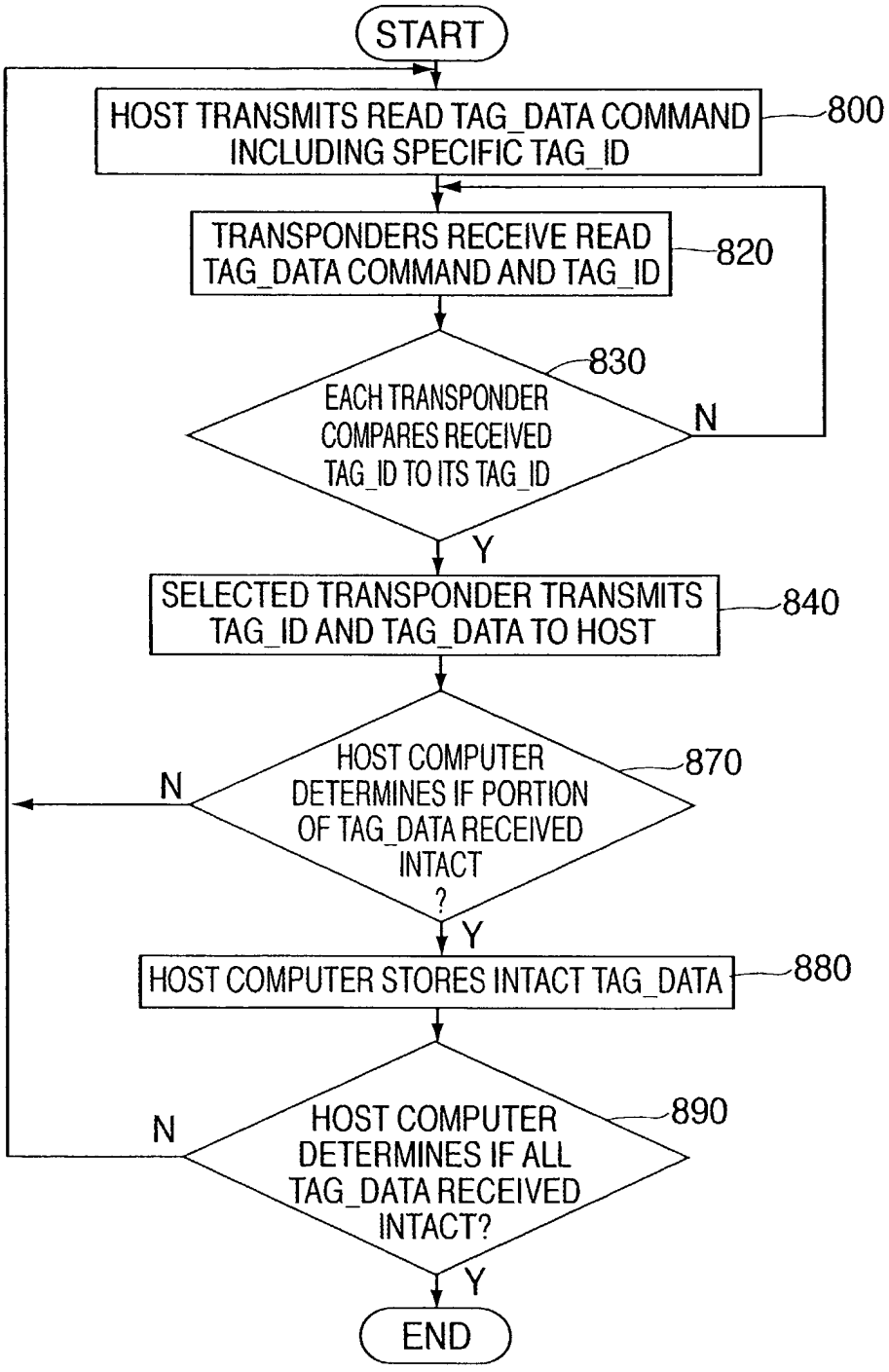
START
HOST TRANSMITS READ TAG_DATA COMMAND INCLUDING SPECIFIC TAG_ID
800
TRANSPONDERS RECEIVE READ TAG_DATA COMMAND AND TAG_ID
820
EACH TRANSPONDER COMPARES RECEIVED TAG_ID TO ITS TAG_ID
830
N
Y
SELECTED TRANSPONDER TRANSMITS TAG_ID AND TAG_DATA TO HOST
840
HOST COMPUTER DETERMINES IF PORTION OF TAG_DATA RECEIVED INTACT ?
870
N
Y
HOST COMPUTER STORES INTACT TAG_DATA
880
HOST COMPUTER DETERMINES IF ALL TAG_DATA RECEIVED INTACT?
890
N
Y
END

FIG. 8

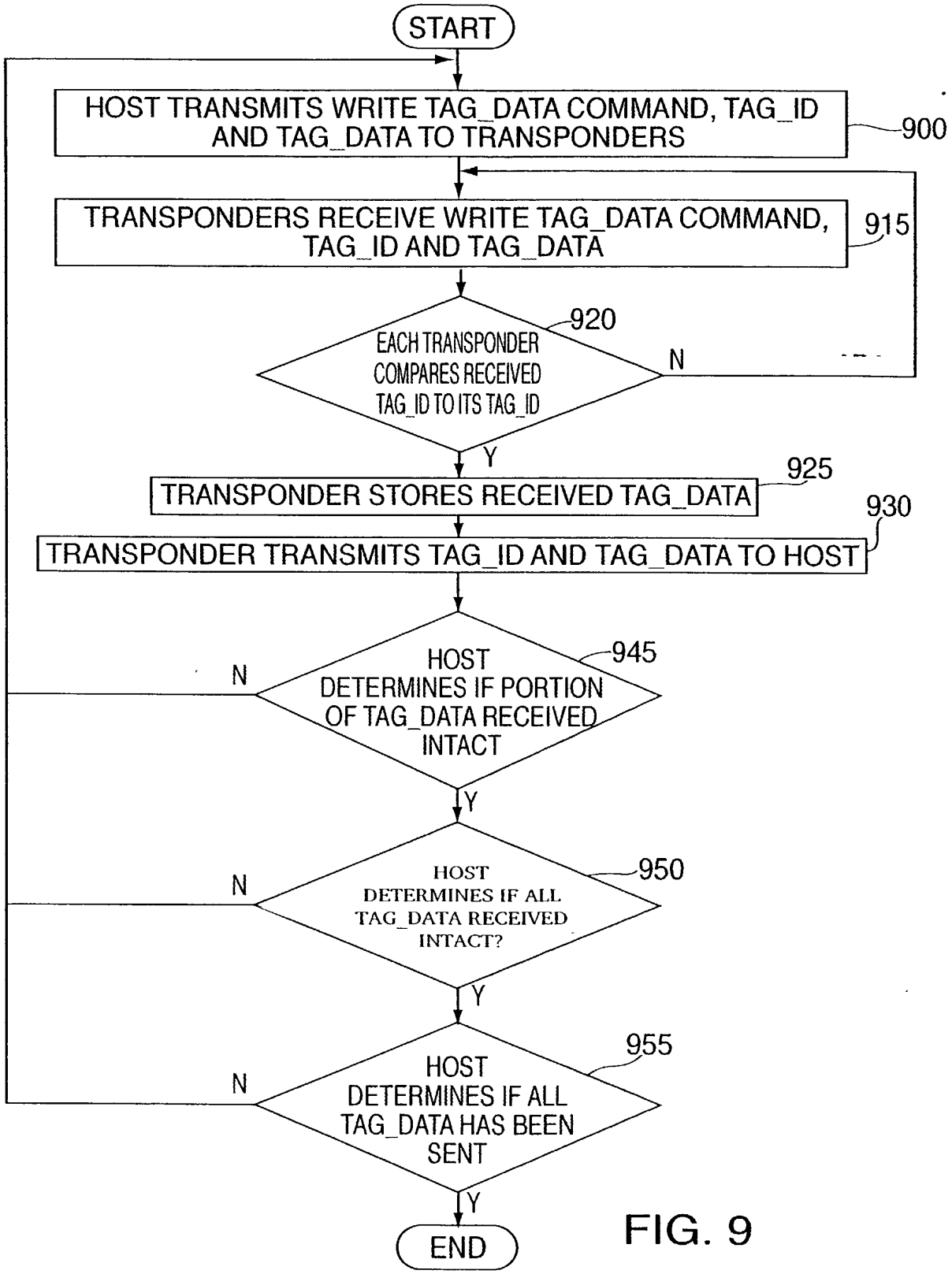
START
HOST TRANSMITS WRITE TAG_DATA COMMAND, TAG_ID AND TAG_DATA TO TRANSPONDERS
900
TRANSPONDERS RECEIVE WRITE TAG_DATA COMMAND, TAG_ID AND TAG_DATA
915
EACH TRANSPONDER COMPARES RECEIVED TAG_ID TO ITS TAG_ID
920
N
Y
TRANSPONDER STORES RECEIVED TAG_DATA
925
TRANSPONDER TRANSMITS TAG_ID AND TAG_DATA TO HOST
930
HOST DETERMINES IF PORTION OF TAG_DATA RECEIVED INTACT
945
N
Y
HOST DETERMINES IF ALL TAG_DATA RECEIVED INTACT?
950
N
Y
HOST DETERMINES IF ALL TAG_DATA HAS BEEN SENT
955
N
Y
END

FIG. 9

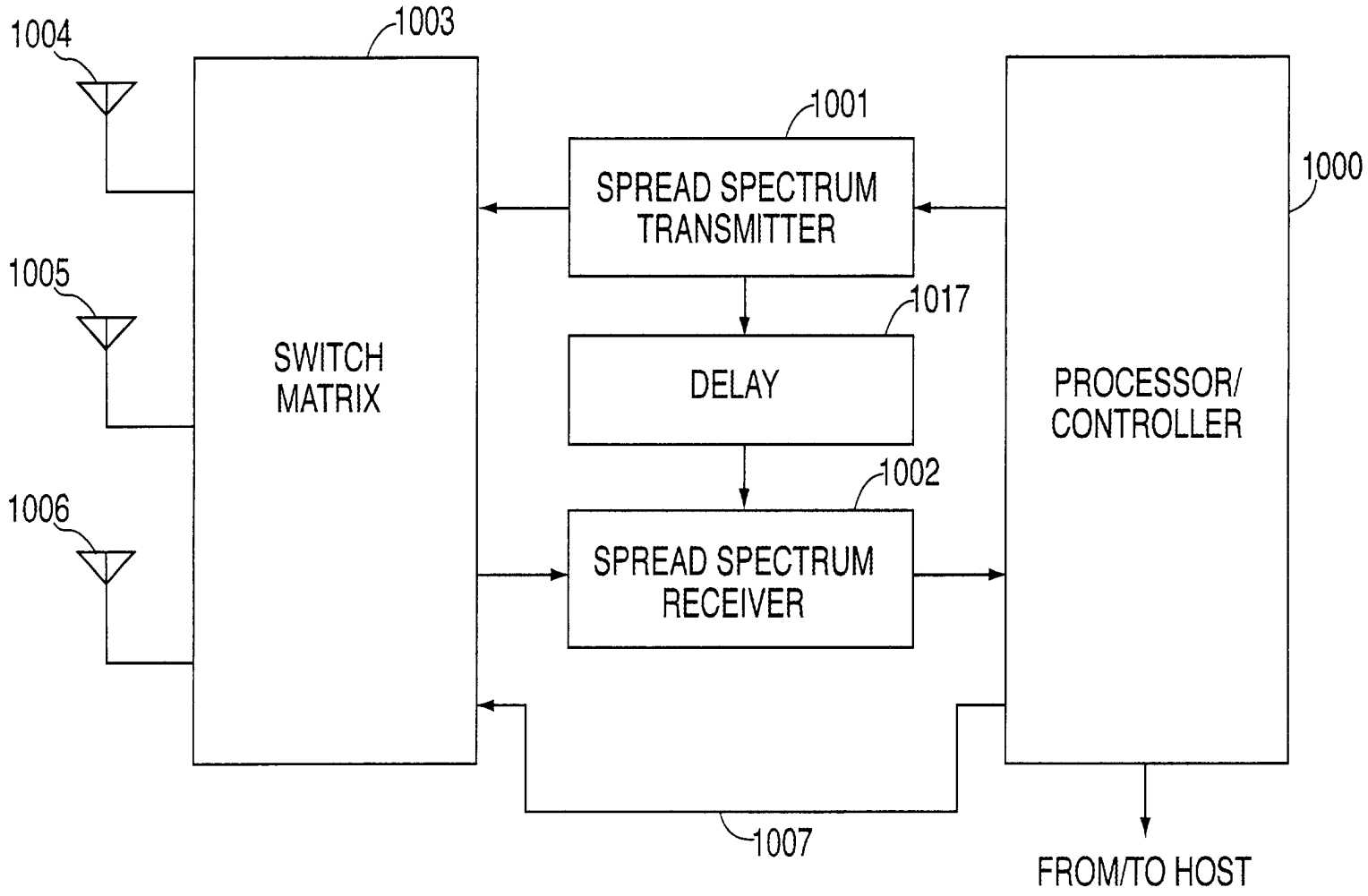

FIG. 10A

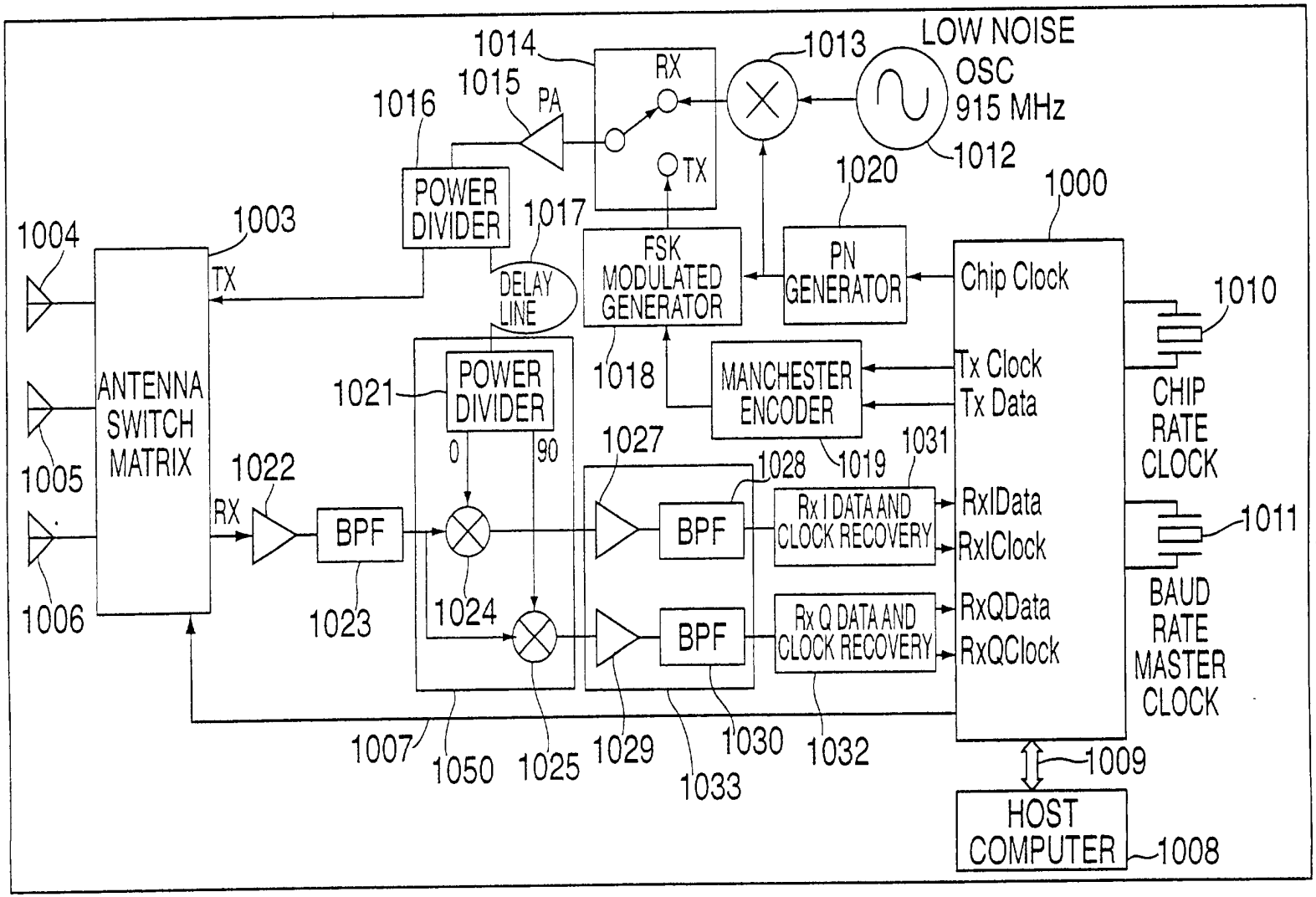

FIG. 10B

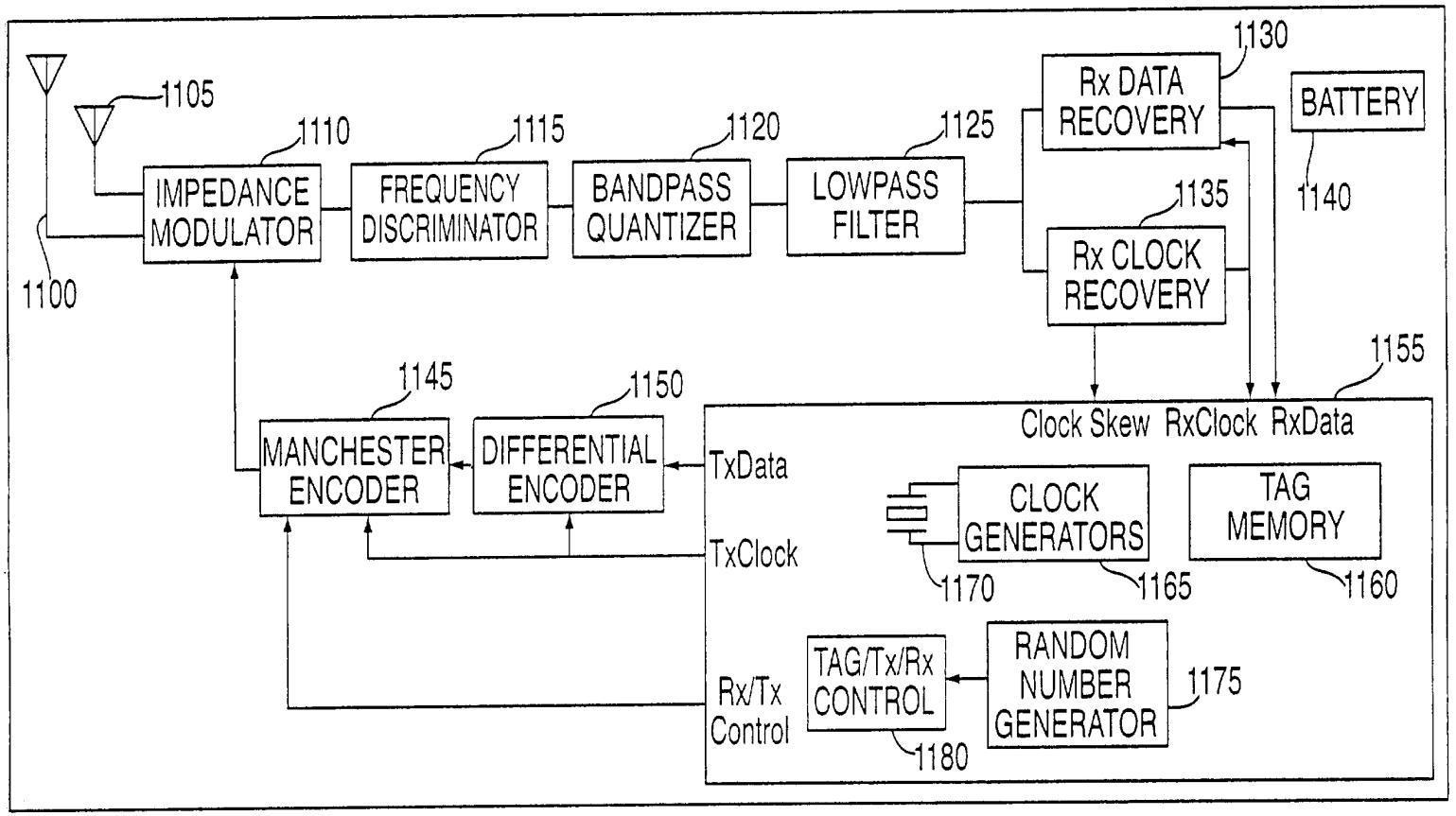

FIG. 11

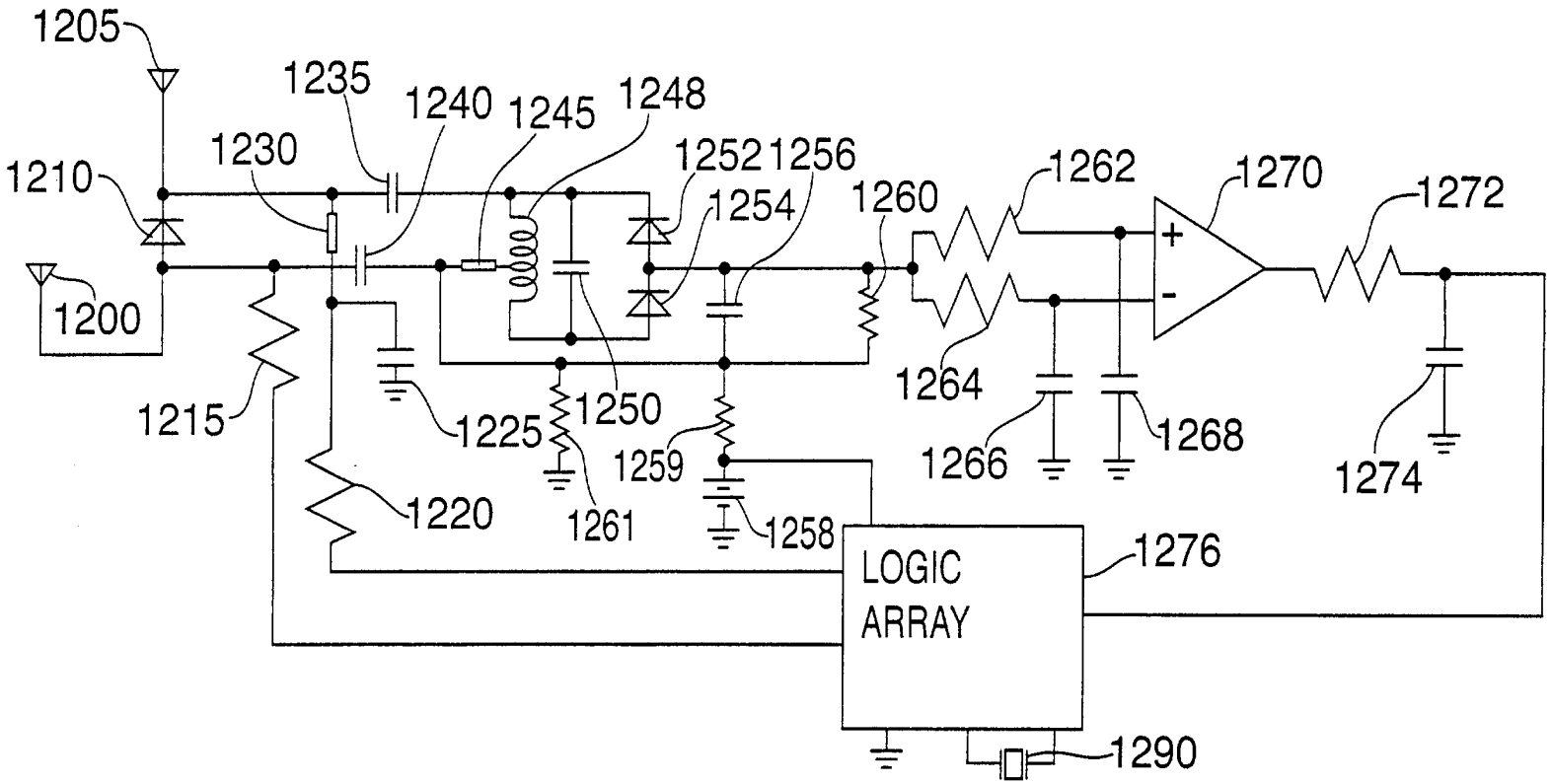
1205
1235
1240
1245
1248
1230
1252
1256
1254
1260
1262
1270
1272
1210
1200
1215
1225
1250
1264
1266
1268
1274
1259
1220
1261
1258
LOGIC
ARRAY
1276
1290
+
-

FIG. 12

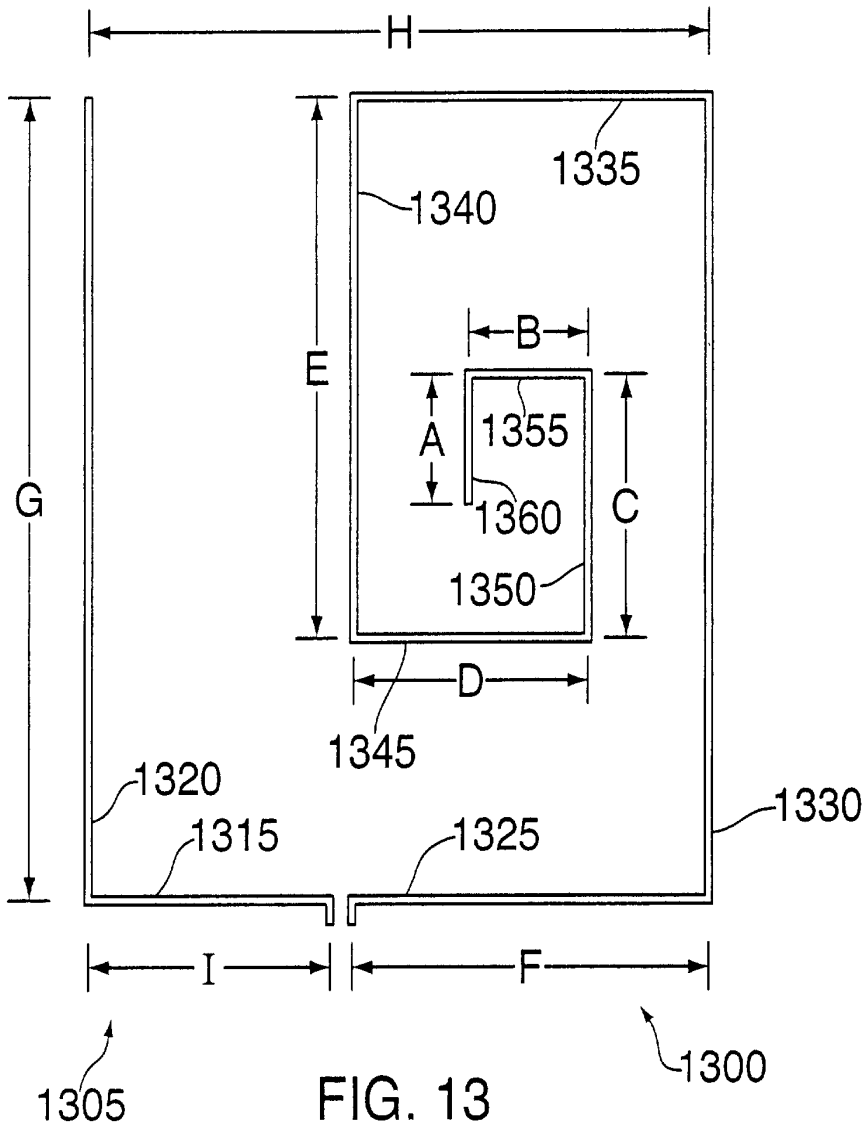

FIG. 13

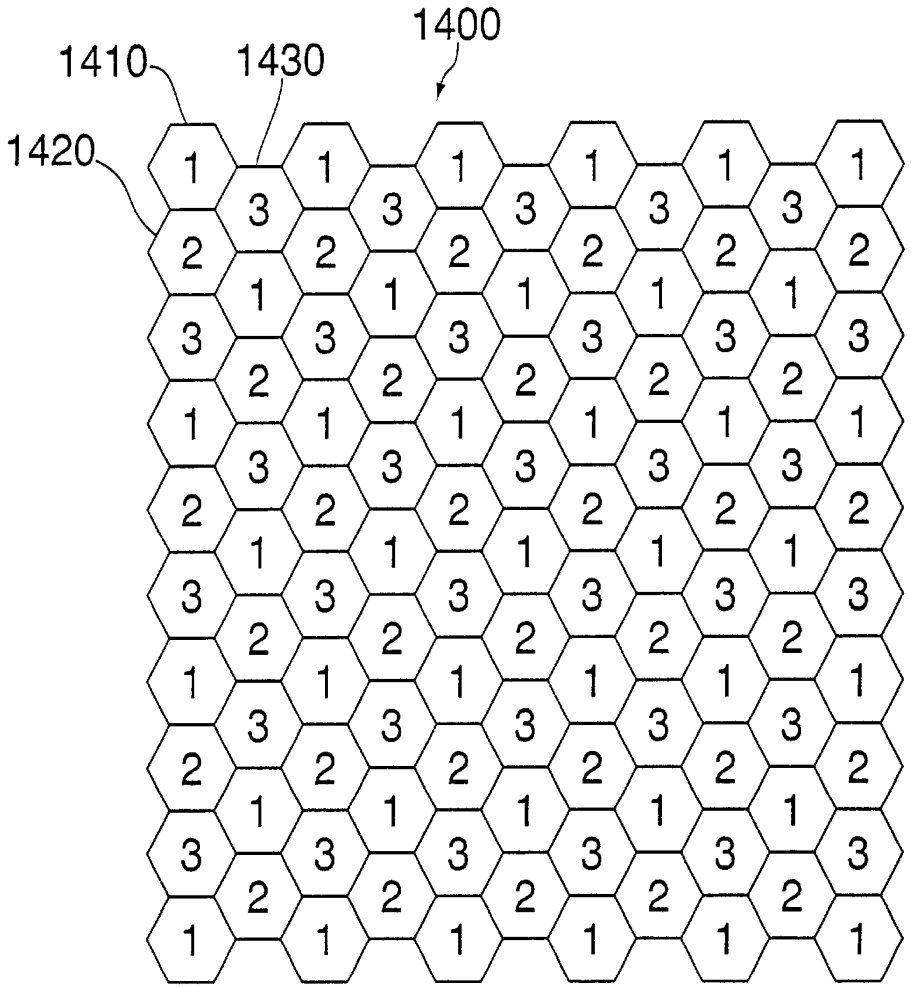

FIG. 14

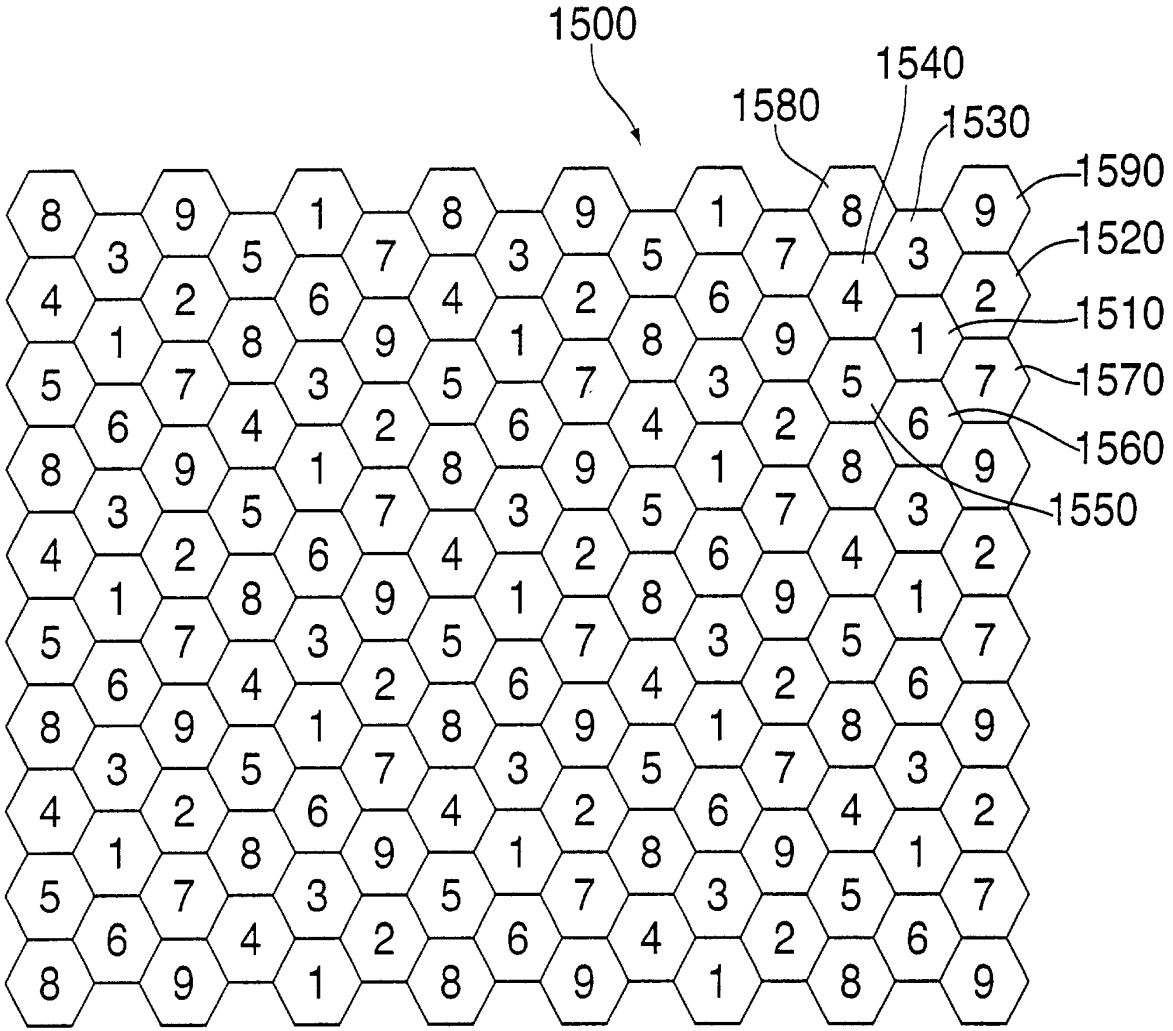

FIG. 15

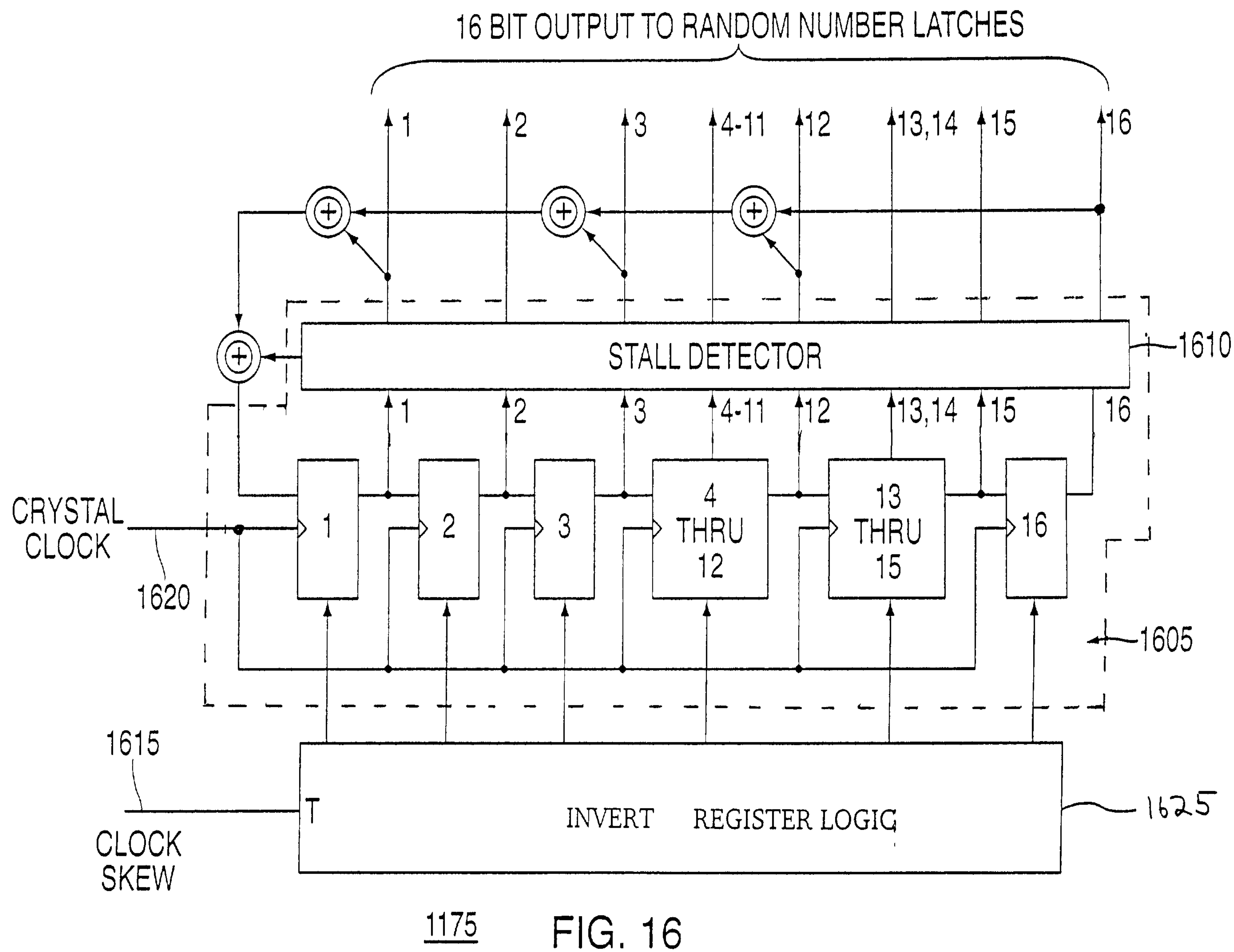
16 BIT OUTPUT TO RANDOM NUMBER LATCHES
1
2
3
4-11
12
13,14
15
16
STALL DETECTOR
1610
1
2
3
4-11
12
13,14
15
16
CRYSTAL CLOCK
1620
1
2
3
4 THRU 12
13 THRU 15
16
1605
1615
CLOCK SKEW
T
INVERT REGISTER LOGIC
1625
1175

FIG. 16